

Application Number 10/693,011
Responsive to Office Action mailed February 9, 2006

REMARKS

This response is responsive to the Office Action dated February 9, 2006. Claims 1-10 and 21 are pending.

Allowable Subject Matter

The Office Action indicated that claims 5-8 and 21 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form.

Claim Rejections Under 35 U.S.C. § 103

The Office Action rejected claims 1-4 under 35 U.S.C. 103(a) as being unpatentable over Nelson et al. (US 6,418,346) (hereafter Nelson) in view of Teshome (US 6,219,255) and Stanton et al. (US 6,249,703) (Stanton). The Office Action also rejected claim 9 under 35 U.S.C. 103(a) as being unpatentable over Nelson, Teshome, and Stanton as applied to claim 1 above, and further in view of Conley et al. (US 6,418,340) (Conley).

Applicant respectfully traverses the rejections under section 103(a). The applied references fail to disclose or suggest the inventions defined by Applicant's claims, and provide no teaching that would have suggested the desirability of modification to arrive at the claimed invention.

For example, the applied references fail to teach or suggest a programmer that includes an internal antenna mounted on a first circuit board and a display device mounted on a second circuit board, wherein the first circuit board includes a substantially contiguous ground plane layer interrupted by a plurality of gaps, as recited in independent claim 1 and as required by dependent claims 2-4 and 9.

In support of the rejection, the Office Action relied on Nelson, which describes a programmer that includes a telemetry antenna on an antenna driver circuit board and a display screen controlled by a graphics circuit. Col. 11, line 50, to col. 12, line 18. The Office Action recognized that Nelson fails to disclose a substantially contiguous ground plane layer interrupted by a plurality of gaps and an internal antenna.

The Office Action asserted that it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the invention of Nelson to include an internal

Application Number 10/693,011
Responsive to Office Action mailed February 9, 2006

antenna mounted on a first circuit board and a ground plane layer that is substantially contiguous and interrupted by a plurality of gaps. Applicant disagrees with this conclusion. The references fail to teach or suggest a ground plane layer that is *substantially contiguous* and interrupted by a plurality of gaps. In addition, the references fail to teach or suggest a display device mounted on a second circuit board, separate from a first board on which an internal antenna is mounted. Moreover, the Office Action identified no teaching in the prior art of a motivation to modify Nelson to conform to the requirements of Applicant's claims.

Nelson in view of Teshome and Stanton fails to teach or suggest a programmer for an implantable medical device including a *substantially contiguous* ground plane layer that is interrupted by a plurality of gaps. In order to overcome the deficient teachings of Nelson, the Office Action looked to Teshome and stated that Teshome teaches a conductive layer, which can serve as a ground plane layer, that "is separated into interconnected segments by outwardly extending gaps." Office Action dated 2-9-06 at p. 3.

As pointed out by Applicants in the previous response, the interconnect 52 described by Teshome does not connect the conductive segments 40, 42 to one another to ensure that the entire layer is grounded, as suggested by the Examiner. Figure 3 of Teshome shows a non-contiguous conductive layer that is fully separated into distinct segments (40, 42) by gaps (48, 54) that pass through the full width of the conductive layer. Teshome also teaches that an interconnect 52 provides capacitive and inductive (electromagnetic) coupling between the segments by crossing over the gap between the first and second segments, which are not a contiguous conductive layer. Col. 5 ll 49-57.

As shown in Figure 3A of Teshome, the interconnect 52 is separated from the plane of the first and second segments by an insulative layer 45. See col. 8, ll. 54-66. Therefore, the interconnect is *not* contiguous with, and does not electrically couple to, either the first segment 40 or second segment 42. In fact, the goals of the techniques disclosed by Teshome (i.e., capacitive and inductive coupling between conductive segments in a logic board) would be impossible to achieve if the conductive layers were substantially contiguous because such coupling requires at least two conductive segments completely separated by a dielectric layer.

Thus, Teshome does nothing to cure the deficient teachings of Nelson because it provides no teaching or suggestion of mounting an internal antenna on a circuit board that includes a

Application Number 10/693,011
Responsive to Office Action mailed February 9, 2006

substantially contiguous ground plane layer interrupted by a plurality of gaps, much less within a programmer for an implantable medical device. Accordingly, it would not have been obvious to a person having ordinary skill in the art to combine the segmented ground plane of Teshome with the antenna driver circuit board of Nelson. Upon realization of the shortcomings of Teshome, it is clear that prior art of record cannot support a prima facie case of unpatentability.

The Office Action looked to Stanton to overcome Nelson's failure to teach or suggest a programmer for an implantable medical device with an internal antenna mounted on a first circuit board. Stanton provides no teaching sufficient to overcome the basic deficiencies in the Nelson and Teshome references relative to the substantially contiguous ground plane layer interrupted by a plurality of gaps required by claim 1.

Nelson in view of Teshome and Stanton also fails to teach or suggest a programmer that includes an internal antenna mounted on a first circuit board and a display device mounted on a second circuit board as recited in independent claim 1 and as required by dependent claims 2-4 and 9. In support of the rejection, the Office Action relied on Nelson, and asserted that Nelson disclosed a display screen mounted on a graphics circuit because "in electrical circuitry mounted is commonly understood to mean that it is electrically connected to that which it is mounted on." This unsupported interpretation of the term "mounted" is unreasonable. None of the prior art of record uses the term "mounted" to refer simply to an electrical interconnection as suggested by the Examiner.

Moreover, regardless of the meaning of "mounted," it is clear that the prior art does not contemplate a second circuit board on which a display device is mounted. In support of the rejection, the Office Action asserted that either the graphics circuit disclosed by Nelson was itself a second circuit board, which is factually incorrect, or it would have been obvious to one of ordinary skill in the art at the time the invention was made to make the graphics circuit a second circuit board. Nelson contains no teaching or suggestion of a second circuit board whatsoever, and a person skilled in the electrical arts would normally place all electrical components in a device on a single circuit board to reduce cost and save space.

The Office Action identified no teaching in the prior art of a motivation to modify Nelson to incorporate a second circuit board. The Office Action cited a case that held that constructing a formerly integral structure in various elements involves only routine skill in the art. However,

Application Number 10/693,011
Responsive to Office Action mailed February 9, 2006

even if incorporating a second circuit involves only routine skill in the art, the Office Action still failed to identify any teaching or suggestion that would have motivated a person skilled in the electrical arts to modify Nelson to include a display device mounted on a second circuit board.

The Office Action also identified no teaching in the prior art of a motivation to modify Nelson to conform to the other requirements of Applicant's claims. Specifically, the Office Action identified no teaching within the prior art that would have suggested modification of the antenna circuit driver board of Nelson to include a substantially contiguous ground plane layer interrupted by a plurality of gaps. Moreover, the Office Action did not cite any suggestion or motivation in the prior art to make such a combination.

For example, the Office Action asserted that it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the invention of Nelson by including "an interconnection in order to assure that the entire layer is grounded in order to more easily ground all required circuitry in order to prevent short-circuiting the device." Office Action dated 2-9-06 at p. 4. Even if such a suggestion existed in the prior art, the Applicant notes that the interconnection disclosed by Teshome would not serve the stated motivation because it is separated from the conductive layer of the circuit by an insulative layer and could not connect the conductive segments to ground.

In summary, the conclusion of obviousness for Applicant's claims 1-4 and 9, and particularly the cited motivation to modify Nelson in view of Teshome and Stanton, is unsupported by any substantial evidence in the record. Conley provides no teaching sufficient to overcome the basic deficiencies in the Nelson, Teshome, and Stanton references relative to the claimed invention.

Claims 2-4, and 9 are dependent on claim 1. As described above, Nelson, Teshome, and Stanton fail to disclose or suggest each and every limitation of Applicant's independent claim 1. In view of the fundamental shortcomings identified above, Applicant reserves comment concerning the additional limitations expressed in the dependent claims and does not acquiesce in the Examiner's application of the teachings of Nelson, Teshome, Stanton, and Conley to those claims.

Application Number 10/693,011
Responsive to Office Action mailed February 9, 2006

For at least these reasons, the Examiner has failed to establish a prima facie case for non-patentability of Applicant's claims 1-4 and 9 under 35 U.S.C. 103(a). Withdrawal of this rejection is requested.

Provisional Rejection for Obviousness-type Double Patenting:

The Examiner provisionally rejected claims 1-4 and 10 under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 1 of copending application no. 10/693,015 in view of Teshome (US 6,219,255). Applicant respectfully traverses this rejection, particularly in light of the deficiencies identified in Teshome above. Applicant notes, however, the provisional status of this rejection. Accordingly, Applicants will address this issue if and when the rejection is formally applied.

CONCLUSION

All claims in this application are in condition for allowance. Applicant respectfully requests reconsideration and prompt allowance of all pending claims. Please charge any additional fees or credit any overpayment to deposit account number 50-1778. The Examiner is invited to telephone the below-signed attorney to discuss this application.

Date:

5-8-06

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